REMARKS

The Examiner is thanked for the thorough examination of the application. No new matter is believed to be added to the application by this Amendment.

Entry Of Amendment

Entry of this Amendment under 37 C.F.R. §1.116 is respectfully requested because it cancels claims and places the application in condition for allowance. Alternately, entry is requested as placing the application in better form for appeal.

Status Of The Claims

Upon entry of this Amendment claims 1, 4 and 7-15 are pending in the application. Claims 5 and 6 are canceled by this Amendment. Claim 1 has been amended to incorporate the subject matter of canceled claim 6. Claim 14 finds support in the specification at page 15, lines 16 to 22. Claim 15 finds support in claims 1 and 4 and in the Examples in the specification.

Rejections Under 35 U.S.C. §103(a)

1. Claims 1, 4, 5, 8, 9 and 13 have been rejected under 35 U.S.C. §103(a) as being obvious over Fushihara (U.S. 2002/0098919) in view of Bulpett (U.S. 2002/0086743).

2. Claims 1, 4-8, 10, 11 and 13 have been rejected under 35 U.S.C. §103(a) as being obvious over Ohira (U.S. Patent 6,509,410) in view of Bulpett and Akashi (U.S. Patent 5,300,257).

3. Claims 1, 4, 5, 7, 8 and 10-13 have been rejected under 35 U.S.C. §103(a) as being obvious over Kennedy (U.S. Patent 5,409,233) in view of Bulpett and Akashi.

Applicants traverse the aforesaid rejections and respectfully requested reconsideration and withdrawal thereof for the reasons set forth below. Applicants additionally note that claims 5 and 6 are canceled by this amendment, thereby mooting the rejections of these claims.

The Present Invention And Its Advantages

The golf ball of the present invention includes a paint film formed on a surface thereof, and the paint film contains 0.05 to 5 parts by mass of a phosphorus stabilizer with respect to 100 parts by mass of a resin component. The resin component contains a two-component curing type urethane resin obtainable by curing a urethane polyol with a polyisocyanate, and the phosphorus stabilizer is a hypophosphorous acid compound, or a derivative thereof.

According to the present invention, the paint film containing the hypophosphorous acid compound and the two-component curing type urethane resin provides not only excellent coloring-resistance but also excellent adhesion and excellent durability, even for a practice ball as used in a golf range, which is subjected to the repeated shots and the repeated brushing-washes that make the paint film peel off easily (see page 4, 2nd paragraph of the specification). Also, the present invention can have a paint film thickness of 5 to 20 μm (claim 14). In one embodiment, the paint film conatains a two-component curing type urethane resin together with is tetrakis (2,4-di-tert-butyl-5-methylphenyl)[1,1'-biphenyl]-4,4'-diylbisphosphonite (claim 15).

None of the cited references disclose or suggest that the paint film containing a hypophosphorous acid compound and a two-component type urethane resin as the resin component improves the properties of durability and adhesion.

(1) Fushihara And Bulpett

Fushihara pertains to a coated one-piece golf ball. As the Examiner noted at page 2 of the Office Action, Fushihara discusses a phosphorous compound, and the phosphorous compound is a phosphite (or a diphosphite). The Examiner points to Comparative Example 3 (Table 4) of Fushihara, it is recognized that the adhesion of the golf ball having the paint film containing the phosphites is Δ (fairly good). Therefore, Comparative Example 3 using phosphites as an antioxidant agent merely shows that even if the phosphites are combined with, for iexample, a two-component type urethane, the adhesion of the paint film is not significantly improved.

As a matter of fact, with respect to Comparative Example 3, Fushihara states in paragraph **0056**: "In the golf ball of Comparative Example 3, the adhesion is slightly improved by further adding the antioxidant to the paint of Comparative Example 2, but is not sufficiently obtained."

Also, at page 2 of the Office Action the Examiner admits that Fushihara fails to disclose phosphonites as possible antioxidants. The Examiner then turns to Bulpett.

Bulpett pertains to urethane elastomers and discusses one of the species of hypophosphorous acid compounds that may be comparable to that used in the present invention. However, Bulpett uses the antioxidants for the cover layer, not the paint film as in the present invention. That is, the invention of Bulpett is directed to an improved cover layer which is formed from a polyurethane composition, or a reaction product thereof, that includes at least one polyol; at least one polyisocyanate; at least one curing agent; and at least one color stabilizer; wherein the color stabilizer is present in an amount sufficient to provide a ΔC^* of less than about 22 upon exposure to UV light over a timeframe of 1 hour (see Abstract).

On the other hand, claim 36 of Bullpet recites a paint layer disposed around the inventive cover layer, indicating that Bulpett acknowledges the difference between both layers, and Bulpett focuses on the cover layer to improve the color stability of the golf ball. Also, according to claim 36, the paint layer is substantially free of UV absorber and light stabilizer, which are essential for Bulpett's cover layer.

Therefore, the antioxidants listed in Bulpett are used for the inventive cover layer, and there is no teaching or suggestion of a paint film that includes the antioxidant. Reviewing claim 36 and the object of Bulpett (paragraph **0022**), it is clear that Bulpett fails to use the antioxidant in the paint film.

Although the present invention is also directed to the golf ball having one or more cover layers, the hypophosphorous acid compound is added to the paint film, not the cover layer.

Further, it should be noted that Bulpett fails to disclose a golf ball having a paint film containing the hypophosphorous acid compound, and additionally fails to disclose the amount of the hypophosphorous acid compound. Accordingly, Bulpett fails to teach or suggest that the effects of the paint film of the present invention can be obtained by adding a specific amount of hypophosphorous acid compound to the resin component.

That is, Bulpett only teaches that the inventive cover layer may contain the antioxidants. Accordingly, even if the golf ball of Fushihara is combined with the cover layer of Bulpett, the result is nothing more than a golf ball having a cover layer containing an antioxidant. Therefore, the combination of Fushihara with Bulpett would fail to motivate one of ordinary skill in the art to produce a claimed embodiment of the present invention. A *prima facie* case of obviousness has thus not been made.

In contrast, according to the present invention, the golf balls having a paint film containing hypophosphorous acid compound in a predetermined amount of 0.05 to 5 parts by mass with respect to the resin component of 100 parts by mass have excellent adhesion and durability. These characteristics are neither disclosed nor suggested in any of the cited references.

Also, if one considers using the hypophosphorous acid compound of Bulpett in the paint film of Fushihara, as described above, Fushihara discloses a golf ball having a paint film whose adhesive properties are not improved even when a phosphate and a two-component urethane resin are used as components of the paint film, and Bulpett would rather not use the antioxidants in the paint film (claim 36). Therefore, both references teach away from using hypophosphorous acid compound in the paint film.

As a result, there is no motivation to use a paint film containing an antioxidant to obtain a golf ball having both improved adhesion and improved durability.

Further, claim 14 of the present invention recites the thickness of the paint film of from 5 to 20 μm. In contrast, Bulpett discusses a cover layer containing antioxidants that has a thickness of at least 0.02 inches (Claim 35 and paragraph **0132**). Although Bulpett also discusses an outer cover layer for a multilayer golf ball, it also has same thickness (Paragraph **0132**).

Therefore, the thin paint film of the present invention is entirely different from the cover layers, and it is an unexpected result that even a thin paint film of 5 to 20 μm improves the adhesion and durability when containing the specific hypophosphorous acid compound.

Yet further, Claim 15 recites the specific hypophosphorous acid compound of tetrakis

(2,4-di-tert-butyl-5-methylphenyl)[1,1'-biphenyl]-4,4'-diylbisphosphonite, or a derivative thereof used in the Examples of the present invention. Fushihara and Bulpett neither disclose nor suggest this specific hypophosphorous acid compound.

Therefore Fushihara and Bulpett fail to render the present invention *prima facie* obvious. Also, the present invention shows unexpected results over Fushihara and Bulpett.

(2) Ohira, Bulpett And Akashi

Ohira pertains to a paint film composed of urethane resin to which antioxidants may be added. Ohira, however, fails to disclose examples of antioxidant and additionally fails to disclose a golf ball having a paint film formed with an antioxidant and urethane resin.

The disadvantages of Bulpett have been discussed above. Bulpett discusses that many kinds of antioxidants are used for a cover layer of a golf ball. None of them, however, is used for the paint film..

Accordingly, even if the golf ball of Ohira is combined with the cover layer of Bulpett, the resulting combination would still fall short of yielding the claimed invention. Further, Bulpett is silent on the amount of hypophosphorous acid compound and has no suggestion to improve the characteristic of the paint film when the antioxidant is used in the paint film.

Therefore, combining Ohira with Bulpett would fail to obtain the golf ball of the present invention. On the contrary, Bulpett would rather not use the UV absorber and color stability in the paint film (Claim 36), and thus, the above description "teaches away" from using a paint film including an antioxidant.

Akashi pertains to 4,4'-biphenylenediphosphonite as a resin antioxidant. Those listed resins, however, are nothing more than exhaustive enumeration. Akashi has no teaching or

suggestion whatsoever of forming a paint film on the golf ball and no indication of the problems with respect to the adhesion and durability of the paint film.

As a result, the combination of Ohira, Bulpett and Akashi would fail to motivate one of ordinary skill in the art to produce a claimed embodiment of the invention. A *prima facie* case of obviousness has thus not been made. Also, as discussed above, the present invention displays unexpected result over the conventional art golf ball technology typified by Ohira, Bulpett and Akashi.

(3) Kennedy, Bulpett And Akashi

Kennedy pertains to a golf ball coating composition. As the Examiner notes at page 3 of the Office Action, Kennedy at column 3, line 2 discusses a paint film formed of urethane resin to which antioxidants may be added. However, no example including an antioxidant is described and no description is given in the embodiments of adding the antioxidants to the urethane resin.

As described in Bulpett (discussed above), many kinds of antioxidants are used for a cover layer of a golf ball. For example, phenol species, phosphorous species, and so forth, are used, and among phosphorous compounds, phosphate compounds are also exemplified in addition to the hypophosphorous acid compound without any specific suggestion that they are used in a paint film. (paragraph **0113**). Accordingly, there is no reasonable expectation of success to use the specific hypophosphorous acid compound to obtain the present invention.

Akashi neither discloses a two-component curing type urethane resin nor a golf ball. Accordingly, there is no motivation to use the hypophosphorous acid compound to improve the paint film formed on the golf ball.

As a result, one of ordinary skill in the art would not be motivated by Kennedy, Bulpett and Akashi to produce a claimed embodiment of the present invention. A *prima facie* case of obviousness has thus not been made. Also, the present invention show unexpected results over Kennedy, Bulpett and Akashi, since none of the above cited references mentions that excellent adhesion and durability properties can be provided. The advantages of the invention are thus clear.

These rejections are overcome and withdrawal thereof is respectfully requested.

Information Disclosure Statement

The Examiner is thanked for considering the information Disclosure Statement filed March 4, 2004 and for making the initialed PTO-449 form of record in the application in the Office Action mailed July 26, 2005.

Prior Art

The prior art cited but not utilized by the Examiner indicates the status of the conventional art that the invention supercedes. Additional remarks are accordingly not necessary.

Foreign Priority

The Examiner has acknowledged foreign priority in the Office Action mailed July 26, 2005.

Conclusion

The Examiner's objection rejections have been overcome, obviated or rendered moot. No issues remain. The Examiner is accordingly respectfully requested to place the application in condition for allowance and to issue a Notice of Allowability

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert E. Goozner, Ph.D. (Reg. No. 42,593) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

By

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